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IS 8271-6-5 (1991): Quartz crystal units used for frequency control and selection, Part 6: Series BF for Oscillators, Section 5: Quartz crystal unit type BF-05 [LITD 5: Semiconductor and Other Electronic Components and Devices]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
आवृत्ति नियंत्रण और चयन में प्रयुक्त क्वार्ट्ज
क्रिस्टल इकाइयाँ — विशिष्टि

भाग 6 दोलकों के लिये बी एफ श्रेणी
अनुभाग 5 क्वार्ट्ज क्रिस्टल इकाई टाइप बी एफ-05

Indian Standard

QUARTZ CRYSTAL UNITS USED FOR
FREQUENCY CONTROL AND SELECTION —
SPECIFICATION

PART 6 SERIES BF FOR OSCILLATORS
Section 5 Quartz Crystal Unit Type BF-05

UDC 621.373.5

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Piezoelectric Devices for Frequency Control and Selection Sectional Committee, LTD 12

FOREWORD

This Indian Standard (Part 6/Sec 5) was adopted by the Bureau of Indian Standards, after the draft finalized by the Piezoelectric Devices for Frequency Control and Selection Sectional Committee had been approved by the Electronics and Telecommunication Division Council.

This standard shall be read in conjunction with IS 8271 (Part 1) : 1981 'Specification for quartz crystal units used for frequency control and selection : Part 1 General requirements and tests (*first revision*)'.

This standard is based on JSS 50911 (1971) 'Detail specification for crystal unit, quartz, styles QC 40 and QC 41' issued by the Directorate of Standardization, Ministry of Defence, India. The type of quartz crystal unit covered in this standard is equivalent to style QC 40 of JSS 50911 (1971).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

QUARTZ CRYSTAL UNITS USED FOR FREQUENCY CONTROL AND SELECTION — SPECIFICATION

PART 6 SERIES BF FOR OSCILLATORS Section 5 Quartz Crystal Unit Type BF-05

1 SCOPE

1.1 This standard specifies detail requirements for the characteristics of quartz crystal unit. Type BF-05 used for frequency control and selection in oscillators:

2 REFERENCES

2.1 The following Indian Standards have been referred to in this standard:

IS No.	Title
4570 (Part 5) : 1984	Specification for crystal unit holders: Part 5 Metal, solder seal, two-pin, crystal unit holders types BF, BF/1 and BG, BG/1
8271 (Part 1) : 1981	Specification for quartz crystal units used for frequency control and selection: Part 1 General requirements and test (<i>first revision</i>).

3 OUTLINE AND DIMENSIONS

3.1 Holder outline shall conform to Type BF [*see* IS 4570 (Part 5) : 1984].

4 MARKING

4.1 *See* 8 of IS 8271 (Part 1) : 1981.

5 CONSTRUCTION AND WORKMANSHIP

5.1 *See* 7 of IS 8271 (Part 1) : 1981.

6 TEST SCHEDULE AND DETAIL REQUIREMENTS

6.1 General Conditions for Test

See 9.2 of IS 8271 (Part 1) : 1981.

6.2 Test Schedule

The sequence and grouping of type, routine and acceptance tests shall be in accordance with 9.1 of IS 8271 (Part 1) : 1981.

6.3 Detail Requirements

The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

Table 1 Detail Requirements of Quartz Crystal Unit Type BF-05
(Clause 6.3)

Sl No.	Characteristics	Requirements
(1)	(2)	(3)
a)	Type of holder	BF (<i>See</i> 3)
b)	Frequency range	50 to 125 MHz
c)	Frequency tolerance: Operating temperature range	± 50 ppm Infinity
d)	Load capacitance	Third mechanical overtone
e)	Mode of oscillation	— 55°C to + 105°C
f)	Operating temperature range	<i>See</i> Table 2
g)	Test set, calibration values and rated drive level	7 pF, <i>Max</i>
h)	Capacitance shunt	
j)	Resonance resistance: i) 50 to 90 MHz ii) 90 + to 125 MHz	50 ohms, <i>Max</i> 60 ohms, <i>Max</i>
k)	Shock [as per 9.15 (Severity A) of IS 8271 (Part 1) : 1981]: i) Frequency change permitted ii) Resonance resistance change permitted	± 5 ppm ± 10 percent
m)	Vibration [as per 9.16.1 (Severity A) of IS 8271 (Part 1) : 1981]: i) Frequency change permitted ii) Resonance resistance change permitted	± 5 ppm ± 10 percent
q)	Ageing: Frequency change permitted	± 5 ppm

Table 2 Test Set, Calibration Values and Rated Drive Level
 [Table 1 (g)]

Frequency Range	Calibration Values		Rated Drive Level	Test Set
	Resistance	Resister Voltage Drop		
MHz	ohms	volt	mW	
(1)	(2)	(3)	(4)	(5)
Up to 100	60	0.35	2.0 ± 0.4	TS-683/TSM
Above 100	60	0.35	2.0 ± 0.4	AN/TSM-15

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BUREAU OF INDIAN STANDARDS

Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices :

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg
NEW DELHI 110002

Telephone
{ 331 01 31
{ 331 13 75

Eastern : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Maniktola
CALCUTTA 700054

37 86 62

Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036

2 18 43

Southern : C.I.T. Campus, IV Cross Road, MADRAS 600113

41 29 16

Western : Manakalaya, E9 MIDC, Marol, Andheri (East)
BOMBAY 400093

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